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| 09/824,911 | 04/03/2001 | Shinichiro Haruyama | 7217/64309 | 2107 |

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COOPER & DUNHAM LLP
1185 Avenue of the Americas
New York, NY 10036

EXAMINER

PAYNE, DAVID C

| ART UNIT | PAPER NUMBER |
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2633

DATE MAILED: 02/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/824,911

Applicant(s)

SHINICHIRO

Examiner

David C. Payne

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8, and 15-22, are rejected under 35 U.S.C. 103(a) as being unpatentable over Miracky et al. US 6,636,653 B2 (Miracky) in view of Hovorka et al. US 6,504,633 B1 (Hovorka).

Regarding claims 1, 5-8, 19-22, Miracky disclosed

A receiving apparatus for receiving an optical information signal, comprising: a light receiving element array (Figure 12A, #575A, Col. 19, lines 55-65) having a plurality of light receiving elements arranged in an array for outputting electric signals at levels corresponding to amounts of light received arranged in an array

Miracky does not disclose

an information extraction circuit for receiving the plurality of electric signals output in parallel from said light receiving element array and extracting information in accordance with the optical information signal based on the plurality of electric signals.

Hovorka disclosed an information extraction circuit for converting from photoelectric signals to data (Figure 6). It would have been obvious to one of ordinary skill in the art at the time of invention to perform information extraction in an optical communication system like that of Miracky for the benefit of retrieving and using the information encoded in the optical signal,

see Hovorka Col. 9, lines 50-65.

Regarding claims 2, 16

Miracky disclosed an optical system for condensing the optical information signal to a predetermined region of a light-receiving region of the light receiving element array (e.g., Col. 20, lines 25-40).

Regarding claims 3, 17

Miracky disclosed the optical system is capable of adjusting a position of a light axis direction based on a control signal; and the information extraction circuit outputs the control signal for adjusting the position of the light axis direction to the optical system when information in accordance with the information signal cannot be extracted based on the plurality of electric signals. (e.g., Col. 20, lines 25-40).

Regarding claims 4, 18

the modified invention of Miracky and Hovorka disclosed transmitting optical signals in visible wavelength range (see Hovorka Col. 5, lines 45-55).

Regarding claim 15, Miracky disclosed

A communication system, comprising: a transmitting apparatus (Figure 12B, #605) for

transmitting an optical information signal and
a receiving apparatus (Figure 12A, #575A, Col. 19, lines 55-65) including a light receiving
element array having a plurality of light receiving elements arranged in an array for
outputting electric signals at levels corresponding to amounts of light received arranged in an
array, wherein the respective light receiving elements output electric signals in parallel,

Miracky does not disclose

an information extraction circuit for receiving the plurality of electric signals output in
parallel from said light receiving element array and extracting information in accordance
with the optical information signal based on the plurality of electric signals.

Hovorka disclosed an information extraction circuit for converting from photoelectric signals
to data (Figure 6). It would have been obvious to one of ordinary skill in the art at the time of
invention to perform information extraction in an optical communication system like that of
Miracky for the benefit of retrieving and using the information encoded in the optical signal,
see Hovorka Col. 9, lines 50-65.

3. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miracky et al. US
6,636,653 B2 (Miracky) in view of Morozov et al. US 5,798,580 A (Morozov).

Regarding claim 13, Miracky disclosed

A transmitting apparatus, comprising:

a light emitting diode array () having a number of light emitting diode units corresponding to
a number of bits of parallel data from the conversion circuit arranged in an array, wherein the

respective light emitting diode units are controlled in light emission in parallel based on bit information of the corresponding parallel data to emit an optical information signal dispersed in a spatially predetermined range.

Miracky does not disclose

a conversion circuit for converting serially input data to a plurality of bits of parallel data respectively giving predetermined information;

Morozov disclosed serial to parallel transmission of optical data (e.g. col. 3 lines 45-55). It would have been obvious to one of ordinary skill in the art at the time of invention to use Morozov's serial to parallel conversion and transmission of data in the Miracky invention for the well known benefit of increasing data transmission at lower clock rates.

4. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miracky et al. US 6,636,653 B2 (Miracky) and Morozov et al. US 5,798,580 A (Morozov) as applied to claim 13 above, and in further view of Hovorka et al. US 6,504,633 B1 (Hovorka).

Regarding claim 14,

the modified invention of Miracky and Morozov does not disclose transmitting optical signals in visible wavelength range. Hovorka does disclose transmission in visible wavelength range (see Hovorka Col. 5, lines 45-55). It would have been obvious to one of ordinary skill in the art at the time of invention to use visible light in the modified system for the benefit of using a broader range of transmission frequencies and creating less opportunity of wavelength interference between adjacent transmitters.

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5. Claims 9-12 and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miracky et al. US 6,636,653 B2 (Miracky) in view of Hovorka et al. US 6,504,633 B1 (Hovorka) as applied to claims 5-8 and 19-22 above, and in further view of Morozov et al. US 5,798,580 A (Morozov).

Regarding claims 9-12, and 23-26

The modified Miracky/Hovorka invention disclosed binarizing circuit for binarizing the plurality of electric signals from the light receiving element array; a data selection circuit for selecting data corresponding to the optical information signal from the plurality of binarized electric signals from the binarizing circuit (e.g., Hovorka Col. 5, lines 1-20).

The modified Miracky/Hovorka invention does not disclose a conversion circuit for converting serially input data to a plurality of bits of parallel data respectively giving predetermined information;

Morozov disclosed serial to parallel transmission of optical data (e.g. col. 3 lines 45-55). It would have been obvious to one of ordinary skill in the art at the time of invention to use Morozov's serial to parallel conversion and transmission of data in the modified invention for the well known benefit of increasing data transmission at lower clock rates.

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6. Claims 27-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miracky et al.

US 6,636,653 B2 (Miracky) in view of Hovorka et al. US 6,504,633 B1 (Hovorka) and

Morozov et al. US 5,798,580 A (Morozov).

Regarding claims 27, 29 Miracky disclosed

A communication system, comprising: a transmitting apparatus and a light emitting diode array having a number of light emitting diode units of at least a number corresponding to a number of bits of parallel data from the conversion circuit arranged in an array (Figure 12B, #605) for transmitting an optical information signal and

a receiving apparatus (Figure 12A, #575A, Col. 19, lines 55-65) including a light receiving element array having a plurality of light receiving elements arranged in an array for outputting electric signals at levels corresponding to amounts of light received arranged in an array, wherein the respective light receiving elements output electric signals in parallel,

Miracky does not disclose

an information extraction circuit for receiving the plurality of electric signals output in parallel from said light receiving element array and extracting information in accordance with the optical information signal based on the plurality of electric signals.

Hovorka disclosed an information extraction circuit for converting from photoelectric signals to data (Figure 6). It would have been obvious to one of ordinary skill in the art at the time of invention to perform information extraction in an optical communication system like that of Miracky for the benefit of retrieving and using the information encoded in the optical signal, see Hovorka Col. 9, lines 50-65.

Miracky does not disclose

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a conversion circuit for converting serially input data to a plurality of bits of parallel data respectively giving predetermined information;

Morozov disclosed serial to parallel transmission of optical data (e.g. col. 3 lines 45-55). It would have been obvious to one of ordinary skill in the art at the time of invention to use Morozov's serial to parallel conversion and transmission of data in the Miracky invention for the well known benefit of increasing data transmission at lower clock rates.

Regarding claim 28

Miracky disclosed an optical system for condensing the optical information signal to a predetermined region of a light-receiving region of the light receiving element array (e.g., Col. 20, lines 25-40).

Regarding claim 30

Hovorka disclosed transmitting optical signals in visible wavelength range (see Hovorka Col. 5, lines 45-55).

Regarding claims 31-33

Miracky does not disclose a binarizing circuit.

Hovorka disclosed binarizing circuit for binarizing the plurality of electric signals from the light receiving element array; a data selection circuit for selecting data corresponding to the optical information signal from the plurality of binarized electric signals from the binarizing circuit (e.g., Hovorka Col. 5, lines 1-20). It would have been obvious to one of ordinary skill

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in the art at the time of invention to use the Hovorka binary circuit for the benefit of using a well known method of signal encoding useful for security and compression techniques, see above passage.

Miracky does not disclose a conversion circuit for converting serially input data to a plurality of bits of parallel data respectively giving predetermined information;

Morozov disclosed serial to parallel transmission of optical data (e.g. col. 3 lines 45-55). It would have been obvious to one of ordinary skill in the art at the time of invention to use Morozov's serial to parallel conversion and transmission of data in the modified invention for the well known benefit of increasing data transmission at lower clock rates.

Conclusion

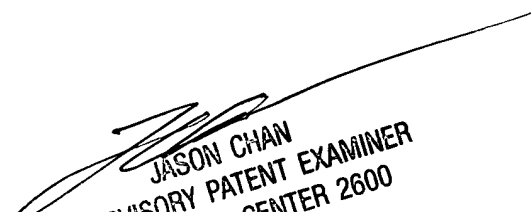
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Payne whose telephone number is (703) 306-0004. The examiner can normally be reached on M-F, 7a-4p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703) 305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dcp


JASON CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600